SEQUENCE LISTING

<110> Falco, S. Carl
Famodu, Omolayo O.
Klein, Ted
Orozco, Emil M. Jr.
Rafalski, J. Antoni
Shen, Jennie
Cahoon, Edgar B.
Sakai, Hajime

<120> Plant Proteinases

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<150> 60/119,599
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Lys Ala Tyr Ala Lys Leu His Gly Ser Tyr Glu Ala Leu Glu Gly Gly
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35 40 45

Gln Ile
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cattatctag ttcccgagaa cccacagctg gatcctgcgt gcacgggtgc ccagcagacg 540
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Val Ser Ile Leu Glu Lys Ala Tyr Ala Lys Leu His Gly Ser Tyr Glu
20 25 30

Ala Leu Glu Gly Gly Leu Val Gln Asp Ala Leu Val Asp Leu Thr Gly
35 40 45

Gly Ala Gly Glu Glu Ile Asp Met Arg Ser Pro Gln Ala Gln Leu Asp
50 55 60

Leu Ala Ser Gly Arg Leu Trp Ser Gln Leu Leu His Phe Lys Gln Glu
65 70 75 80

Gly Phe Leu Leu Gly Ala Gly Ser Pro Ser Gly Ser Asp Ala His Ile
85 90 95

Ser Ser Ser Gly Ile Val Gln Gly His Ala Tyr Ser Ile Leu Gln Val
100 105 110

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Arg Glu Val Asp Gly His Lys Leu Ile Gln Ile Arg Asn Pro Trp Ala
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Asn Glu Val Glu Trp Asn Gly Pro Trp Ser Asp Ser Ser Pro Glu Trp
    130                 135                 140

Thr Glu Arg Met Lys His Lys Leu Met His Val Pro Gln Ser Lys Asn
145                 150                 155                 160

Gly Val Phe Trp Met Ser Trp Gln Asp Phe Gln Ile His Phe Arg Ser
                165                 170                 175

Ile Tyr Val Cys Arg Val Tyr Pro Pro Glu Met Arg Tyr Ser Val His
            180                 185                 190

Gly Gln Trp Arg Gly Tyr Asn Ala Gly Gly Cys Gln Asp Tyr Asp Ser
        195                 200                 205

Trp His Gln Asn Pro Gln Tyr Arg Leu Arg Val Thr Gly Arg Asp Ala
    210                 215                 220

Leu Tyr Pro Val His Val Phe Ile Thr Leu Thr Gln Gly Val Gly Phe
225                 230                 235                 240

Ser Arg Lys Thr Asn Gly Phe Arg Asn Tyr Gln Ser Ser His Asp Ser
                245                 250                 255

Ser Met Phe Tyr Ile Gly Met Arg Ile Leu Lys Thr Gln Gly Cys Arg
            260                 265                 270

Ala Ala Tyr Asn Ile Tyr Met His Glu Ser Ala Gly Gly Thr Asp Tyr
        275                 280                 285

Val Asn Ser Arg Glu Ile Ser Cys Glu Leu Val Leu Asp Pro Tyr Pro
    290                 295                 300

Lys Gly Tyr Thr Ile Val Pro Thr Thr Ile His Pro Gly Glu Glu Ala
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Pro Phe Val Leu Ser Val Phe Ser Lys Ala Ser Ile Arg Leu Glu Ala
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<213> Oryza sativa

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Glu Ala Leu Glu Gly Gly Leu Val Gln Asp Ala Leu Val Asp Leu Thr
         35                  40                  45

Gly Gly Ala Gly Glu Glu Ile Asp Met Arg Ser Pro Gln Ala Gln Ile
     50                  55                  60

Asp Leu Ala Ser Gly Arg Leu Trp Ser Gln Leu Leu His Phe Lys Gln
 65                  70                  75                  80

Glu Gly Phe Leu Leu Gly Ala Gly Ser Pro Ser Gly Ser Asp Ala His
                 85                  90                  95

Ile Ser Ser Ser Gly Ile Val Gln Gly His Ala Tyr Ser Ile Leu Gln
            100                 105                 110

Val Arg Glu Val Asp Gly His Lys Leu Val Gln Ile Arg Asn Pro Trp
        115                 120                 125

Ala Asn Glu Val Glu Trp Asn Gly Pro Trp Ser Asp Ser Ser Gln Glu
    130                 135                 140

Trp Thr Glu Arg Met Lys His Lys Leu Lys His Val Pro Gln Ser Lys
145                 150                 155                 160

Asn Gly Val Phe Trp Met Ser Trp Gln Asp Phe Gln Ile His Phe Arg
                165                 170                 175
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Ser Ile Tyr Val Cys Arg Val Tyr Pro Pro Glu Met Arg Tyr Ser Val
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His Gly Gln Trp Arg Gly Tyr Ser Ala Gly Gly Cys Gln Asp Tyr Asp
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Ser Trp His Gln Asn Pro Gln Tyr Arg Leu Arg Val Thr Gly Arg Asp
    210                 215                 220

Ala Leu Tyr Pro Val His Val Phe Ile Thr Leu Thr Gln Gly Val Gly
225                 230                 235                 240

Phe Ser Arg Lys Thr Asn Gly Phe Arg Asn Tyr Gln Ser Ser His Asp
                245                 250                 255

Ser Ser Met Phe Tyr Ile Gly Met Arg Ile Leu Lys Thr Arg Gly Cys
            260                 265                 270

Arg Ala Ala Tyr Asn Ile Tyr Met His Glu Ser Val Gly Gly Thr Asp
        275                 280                 285

Tyr Val Asn Ser Arg Glu Ile Ser Cys Glu Leu Val Leu Glu Pro Tyr
    290                 295                 300

Pro Lys Gly Tyr Thr Ile Val Pro Thr Thr Ile His Pro Gly Glu Glu
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Ala Pro Phe Val Leu Ser Val Phe Thr Lys Ala Pro Ile Lys Leu Glu
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<212> PRT
<213> Glycine max

<400> 12

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			20					25					30		
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Leu	Leu	Gly	Ala	Gly	Ser	Pro	Ser	Gly	Ser	Asp	Val	His	Ile	Ser	Ser
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Ser	Gly	Ile	Val	Gln	Gly	His	Ala	Tyr	Ser	Ile	Leu	Gln	Val	Arg	Asp
			100					105					110		
Val	Asp	Gly	His	Lys	Leu	Val	Gln	Ile	Arg	Asn	Pro	Trp	Ala	Asn	Glu
		115					120					125			
Val	Glu	Trp	Asn	Gly	Pro	Trp	Ser	Asp	Ser	Ser	Pro	Glu	Trp	Thr	Asp
	130					135					140				
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145					150					155					160
Phe	Trp	Met	Ser	Trp	Gln	Asp	Phe	Gln	Ile	His	Phe	Arg	Ser	Ile	Tyr
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		195					200					205			
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	210					215					220				
Pro	Ile	His	Val	Phe	Ile	Thr	Leu	Thr	Gln	Gly	Val	Gly	Phe	Ser	Arg
225					230					235					240
Thr	Thr	Ala	Gly	Phe	Arg	Asn	Tyr	Gln	Ser	Ser	His	Asp	Ser	Gln	Met
				245					250					255	

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Phe Tyr Ile Gly Met Arg Ile Leu Lys Thr Arg Gly Arg Arg Ala Ala
            260                 265                 270

Phe Asn Ile Tyr Leu His Glu Ser Val Gly Gly Thr Asp Tyr Val Asn
        275                 280                 285

Ser Arg Glu Ile Ser Cys Glu Met Val Leu Glu Pro Glu Pro Lys Gly
    290                 295                 300

Tyr Thr Ile Val Pro Thr Thr Ile His Pro Gly Glu Glu Ala Pro Phe
305                 310                 315                 320

Val Leu Ser Val Phe Thr Lys Ala Ser Ile Thr Leu Glu Ala Leu
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<213> Oryza sativa

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20 25 30

Gly Leu Gly Gly Ser Ala His Xaa Ala Pro Val Leu Pro Thr Asp Gly
35 40 45

Leu Pro Asp Asp Phe Asp Trp Arg Asp His Gly Ala Val Gly Pro Val
50 55 60

Lys Asn Gln Gly Ser Cys Gly Ser Cys Trp Ser Phe Ser Ala Ser Gly
65 70 75 80

Ala Leu Glu Gly Ala Asn Tyr Leu Ala Thr Gly Lys Met Xaa Val Leu
85 90 95

Ser Glu Xaa Gln Met Val Asp Cys Asp His Glu Cys Asp Ser Ser Xaa
100 105 110

Pro Asp Ser Cys Asp Ala Gly Cys Asn Gly Gly Leu Met Thr Asn Ala
115 120 125

Phe Ser Tyr Leu Leu Lys Ser Gly Gly Leu Glu Ser Glu Lys Asp Tyr
130 135 140

Pro Tyr Thr Gly Arg Asp Gly Thr Cys Lys Phe Asp Lys Ser Xaa Ile
145 150 155 160

Val Thr Ser Val Gln Asn Phe
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<210> 15
<211> 717
<212> DNA
<213> Triticum aestivum

<220>
<221> unsure
<222> (342)

<220>
<221> unsure
<222> (634)

<400> 15
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ggtgctctcc gagcagcagc tggtcgactg cgaccatgag tgcgacccag cagaacctga 120
ttcatgcgat gctggatgca atggtgggtt gatgacttca gcctttagct atctgttgaa 180
atctggtggc cttgagagag aaaaggatta cccttacacc gggaaggacg gtacctgcaa 240
atttgagaag tccaagattg ctgcttcagt tcaaaacttc agcgttgtcg ctgttgatga 300
agaacagatt gctgctaacc ttgtgaaata tggaccgctg gncatcggta tcaacgccgc 360
atacatgcag acatacatcg gcggagtgtc atgcccatac atctgcggca ggcacctcga 420
ccacggtgtc cttctcgtcg gctacggggc gtctggcttc gcgccttccc gcttcaagga 480
gaagccctac tggatcatca agaactcatg gggcgagaac tgggggggaca agggttacta 540
caagatctgc aggggctcga acgtgcgcaa caagtgtggc gtcgactcca tggtctccac 600
ggtgtccgcc actcacgcct ccaaggacga gtangctctg ggtctgatct gatctgatcg 660
gcgggcctcc tggtgtcatc ttgggttccg tgtgtgtatc gctagaaaga aacttta 717

<210> 16
<211> 209
<212> PRT
<213> Triticum aestivum

<220>
<221> UNSURE
<222> (114)

<400> 16
Ser Phe Ser Ala Ser Gly Ala Leu Glu Gly Ala Asn Tyr Leu Ala Thr
1 5 10 15

Gly Lys Met Glu Val Leu Ser Glu Gln Gln Leu Val Asp Cys Asp His
20 25 30

Glu Cys Asp Pro Ala Glu Pro Asp Ser Cys Asp Ala Gly Cys Asn Gly
35 40 45

Gly Leu Met Thr Ser Ala Phe Ser Tyr Leu Leu Lys Ser Gly Gly Leu
50 55 60

Glu Arg Glu Lys Asp Tyr Pro Tyr Thr Gly Lys Asp Gly Thr Cys Lys
65 70 75 80

Phe Glu Lys Ser Lys Ile Ala Ala Ser Val Gln Asn Phe Ser Val Val
85 90 95

Ala Val Asp Glu Glu Gln Ile Ala Ala Asn Leu Val Lys Tyr Gly Pro
100 105 110

Leu Xaa Ile Gly Ile Asn Ala Ala Tyr Met Gln Thr Tyr Ile Gly Gly
115 120 125

Val Ser Cys Pro Tyr Ile Cys Gly Arg His Leu Asp His Gly Val Leu
130 135 140

Leu Val Gly Tyr Gly Ala Ser Gly Phe Ala Pro Ser Arg Phe Lys Glu
145 150 155 160

Lys Pro Tyr Trp Ile Ile Lys Asn Ser Trp Gly Glu Asn Trp Gly Asp
165 170 175

```
Lys Gly Tyr Tyr Lys Ile Cys Arg Gly Ser Asn Val Arg Asn Lys Cys
            180                 185                 190

Gly Val Asp Ser Met Val Ser Thr Val Ser Ala Thr His Ala Ser Lys
        195                 200                 205

Asp
```

<210> 17
<211> 1174
<212> DNA
<213> Oryza sativa

<400> 17

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gcacgagccg cggagcacgg cgtcaccaag ttctccgacc tcaccccggc cgagttccgc   60
cgggcctacc tcggcctccg cacgtcgcgc cgcgccttcc tgcgggggct cggcgggtcc  120
gcccacgagg cgcccgtcct ccccaccgac ggcctccccg acgacttcga ctggagagac  180
cacggcgccg tcggccccgt caagaaccag ggatcgtgcg ggtcgtgctg gtcgttcagc  240
gcgtcggggg cgctagaggg agcgaactac ctggcgacgg gcaagatgga cgtgctctcc  300
gagcagcaga tggtcgattg cgaccatgag tgtgattcat cagaacctga ttcatgtgat  360
gctggatgca atggtggatt gatgactaac gccttcagct atcttttgaa atccggtggc  420
cttgagagtg agaaggatta cccctacact gggagggatg gcacctgcaa atttgacaag  480
tcgaagattg ttacttcagt tcagaacttc agtgttgtct ctgtcgatga ggatcagatt  540
gctgccaacc ttgtcaaaca tgggccactt gcaattggca tcaatgctgc gtacatgcaa  600
acatacattg gtggtgtttc gtgcccgtac atctgtggca ggcaccttga tcacggtgtt  660
cttctcgttg gctacggcgc atctggtttt gctccaatcc gcctaaagga taaggcctac  720
tggatcatca agaactcctg gggcgagaac tggggagagc atgggtacta caagatctgc  780
aggggctcca acgtccgcaa caaatgtggc gtggattcta tggtctccac cgtgtctgcc  840
atccacacct caaaggagta gattctgatc agtagtcccc cgaccatcct gtggatggtt  900
cacagttggt gattctgata ttatatataa gctagaacta cgaaatatac ttagtttatg  960
ctccatctgc gctgttattg cagttatgat aagcagcgat gatgtgaagc tgcaactgaa 1020
tgtttgtcct aagttatatg cttggtttgc tacgcaatgc tacacgctat ttggaggtag 1080
ctttaagtat tatcgccatt cacgaacttg tatttttact attaccaatc ttttgaatgg 1140
tctgtattat atgcaaaaaa aaaaaaaaaa aaaa                             1174
```

<210> 18
<211> 286
<212> PRT
<213> Oryza sativa

<400> 18

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Ala Arg Ala Ala Glu His Gly Val Thr Lys Phe Ser Asp Leu Thr Pro
  1               5                  10                  15

Ala Glu Phe Arg Arg Ala Tyr Leu Gly Leu Arg Thr Ser Arg Arg Ala
             20                  25                  30

Phe Leu Arg Gly Leu Gly Gly Ser Ala His Glu Ala Pro Val Leu Pro
         35                  40                  45

Thr Asp Gly Leu Pro Asp Asp Phe Asp Trp Arg Asp His Gly Ala Val
     50                  55                  60

Gly Pro Val Lys Asn Gln Gly Ser Cys Gly Ser Cys Trp Ser Phe Ser
 65                  70                  75                  80

Ala Ser Gly Ala Leu Glu Gly Ala Asn Tyr Leu Ala Thr Gly Lys Met
                 85                  90                  95
```

```
Asp Val Leu Ser Glu Gln Gln Met Val Asp Cys Asp His Glu Cys Asp
            100                 105                 110

Ser Ser Glu Pro Asp Ser Cys Asp Ala Gly Cys Asn Gly Gly Leu Met
        115                 120                 125

Thr Asn Ala Phe Ser Tyr Leu Leu Lys Ser Gly Gly Leu Glu Ser Glu
    130                 135                 140

Lys Asp Tyr Pro Tyr Thr Gly Arg Asp Gly Thr Cys Lys Phe Asp Lys
145                 150                 155                 160

Ser Lys Ile Val Thr Ser Val Gln Asn Phe Ser Val Val Ser Val Asp
                165                 170                 175

Glu Asp Gln Ile Ala Ala Asn Leu Val Lys His Gly Pro Leu Ala Ile
            180                 185                 190

Gly Ile Asn Ala Ala Tyr Met Gln Thr Tyr Ile Gly Gly Val Ser Cys
        195                 200                 205

Pro Tyr Ile Cys Gly Arg His Leu Asp His Gly Val Leu Leu Val Gly
    210                 215                 220

Tyr Gly Ala Ser Gly Phe Ala Pro Ile Arg Leu Lys Asp Lys Ala Tyr
225                 230                 235                 240

Trp Ile Ile Lys Asn Ser Trp Gly Glu Asn Trp Gly Glu His Gly Tyr
                245                 250                 255

Tyr Lys Ile Cys Arg Gly Ser Asn Val Arg Asn Lys Cys Gly Val Asp
            260                 265                 270

Ser Met Val Ser Thr Val Ser Ala Ile His Thr Ser Lys Glu
        275                 280                 285
```

<210> 19
<211> 935
<212> DNA
<213> Triticum aestivum

<400> 19

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aacctgattc atgcgatgct ggatgcaatg gtgggttgat gacttcagcc tttagctatc 180
tgttgaaatc tggtggcctt gagagagaaa aggattaccc ttacaccggg aaggacggta 240
cctgcaaatt tgagaagtcc aagattgctg cttcagttca aaacttcagc gttgtcgctg 300
ttgatgaaga acagattgct gctaaccttg tgaaatatgg accgctggcc atcggtatca 360
acgccgcata catgcagaca tacatcggcg gagtgtcatg cccatacatc tgcggcaggc 420
acctcgacca cggtgtcctt ctcgtcggct acggggcgtc tggcttcgcg ccttcccgct 480
tcaaggagaa gccctactgg atcatcaaga actcatgggg cgagaactgg ggggacaagg 540
gttactacaa gatctgcagg ggctcgaacg tgcgcaacaa gtgtggcgtc gactccatgg 600
tctccacggt gtccgccact cacgcctcca aggacgagta ggctctggtc tgatctgatc 660
tgatcggcgg ccctcctggt gtcgatcttg gtttcggtgt gtgtatcgct agaaagaaac 720
tttaatacgt agtagtcggc taggctccat cgtcgttgtg gtatcagcag cgaagatgcg 780
aagtcgcaat agaatgcttg ctgtataact tatgcatttg ctaaatttgc tacgccatgc 840
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ttgtattgct tccatcaaaa aaaaaaaaaa aaaaa                             935
```

<210> 20
<211> 212
<212> PRT
<213> Triticum aestivum

<400> 20
Thr Arg Ser Phe Ser Ala Ser Gly Ala Leu Glu Gly Ala Asn Tyr Leu
1 5 10 15

Ala Thr Gly Lys Met Glu Val Leu Ser Glu Gln Gln Leu Val Asp Cys
20 25 30

Asp His Glu Cys Asp Pro Ala Glu Pro Asp Ser Cys Asp Ala Gly Cys
35 40 45

Asn Gly Gly Leu Met Thr Ser Ala Phe Ser Tyr Leu Leu Lys Ser Gly
50 55 60

Gly Leu Glu Arg Glu Lys Asp Tyr Pro Tyr Thr Gly Lys Asp Gly Thr
65 70 75 80

Cys Lys Phe Glu Lys Ser Lys Ile Ala Ala Ser Val Gln Asn Phe Ser
85 90 95

Val Val Ala Val Asp Glu Glu Gln Ile Ala Ala Asn Leu Val Lys Tyr
100 105 110

Gly Pro Leu Ala Ile Gly Ile Asn Ala Ala Tyr Met Gln Thr Tyr Ile
115 120 125

Gly Gly Val Ser Cys Pro Tyr Ile Cys Gly Arg His Leu Asp His Gly
130 135 140

Val Leu Leu Val Gly Tyr Gly Ala Ser Gly Phe Ala Pro Ser Arg Phe
145 150 155 160

Lys Glu Lys Pro Tyr Trp Ile Ile Lys Asn Ser Trp Gly Glu Asn Trp
165 170 175

Gly Asp Lys Gly Tyr Tyr Lys Ile Cys Arg Gly Ser Asn Val Arg Asn
180 185 190

Lys Cys Gly Val Asp Ser Met Val Ser Thr Val Ser Ala Thr His Ala
195 200 205

Ser Lys Asp Glu
210

<210> 21
<211> 743
<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (645)

<220>
<221> unsure
<222> (680)

<220>
<221> unsure
<222> (740)

<400> 21
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tctccgctgc cgtagccacc gtcgaacgaa tcgacgatga agacaacctt ctgatccgtc 120
aagtggtgcc ggacgcggag gaccaccacc tgctcaacgc ggagcaccac ttctccgcct 180
tcaagacaaa gttcgccaag acctacgcca cgcaggagga gcacgaccac cgcttccgta 240
tcttcaagaa caacttgctc cgcgccaagt cgcaccagaa attggacccc tccgccgtcc 300
acggcgtcac caggttctcc gatctcactc cggctgagtt tcgcggccag ttcctcggcc 360
tgaagccgct ccgccttccc tccgacgctc agaaggctcc gatccttccg accagcgacc 420
ttcctaccga tttcgattgg cgcgaccatg gagctgttac cggcgtcaag aatcagggct 480
cgtgcggatc gtgttggtca tttagcgccg ttggagcttt ggaaggtgcc cattttcttt 540
ctaccggtgg gctcgtgagc ctcagtgagc agcaacttgt ggattgcgat catgagtgtg 600
atccggaaga acgtggagca tgtgattcgg gttgtaacgg tgggntgatg accactgcat 660
tttgagtaca cactcaaggn tggtggacta atgccaagaa agaggattat ccctacaatg 720
ggagaaaacg ttggccctgn aaa 743

<210> 22
<211> 234
<212> PRT
<213> Glycine max

<220>
<221> UNSURE
<222> (209)

<220>
<221> UNSURE
<222> (220)

<400> 22
Met Ala Asn Leu Ser Leu Leu Phe Phe Gly Leu Leu Leu Phe Ser Ala
1 5 10 15

Ala Val Ala Thr Val Glu Arg Ile Asp Asp Glu Asp Asn Leu Leu Ile
20 25 30

Arg Gln Val Val Pro Asp Ala Glu Asp His His Leu Leu Asn Ala Glu
35 40 45

His His Phe Ser Ala Phe Lys Thr Lys Phe Ala Lys Thr Tyr Ala Thr
50 55 60

Gln Glu Glu His Asp His Arg Phe Arg Ile Phe Lys Asn Asn Leu Leu
65 70 75 80

Arg Ala Lys Ser His Gln Lys Leu Asp Pro Ser Ala Val His Gly Val
85 90 95

Thr Arg Phe Ser Asp Leu Thr Pro Ala Glu Phe Arg Gly Gln Phe Leu
100 105 110

Gly Leu Lys Pro Leu Arg Leu Pro Ser Asp Ala Gln Lys Ala Pro Ile
115 120 125

Leu Pro Thr Ser Asp Leu Pro Thr Asp Phe Asp Trp Arg Asp His Gly
130 135 140

```
Ala Val Thr Gly Val Lys Asn Gln Gly Ser Cys Gly Ser Cys Trp Ser
145                 150                 155                 160

Phe Ser Ala Val Gly Ala Leu Glu Gly Ala His Phe Leu Ser Thr Gly
                165                 170                 175

Gly Leu Val Ser Leu Ser Glu Gln Gln Leu Val Asp Cys Asp His Glu
            180                 185                 190

Cys Asp Pro Glu Glu Arg Gly Ala Cys Asp Ser Gly Cys Asn Gly Gly
        195                 200                 205

Xaa Met Thr Thr Ala Phe Glu Tyr Thr Leu Lys Xaa Gly Gly Leu Met
    210                 215                 220

Lys Lys Glu Asp Tyr Pro Tyr Asn Gly Arg
225                 230
```

<210> 23
<211> 1369
<212> DNA
<213> Glycine max

<400> 23

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tcctcctatt ctccgctgcc gtagccaccg tcgaacgaat cgacgatgaa gacaaccttc  120
tgatccgtca agtggtgccg gacgcggagg accaccacct gctcaacgcg gagcaccact  180
tctccgcctt caagacaaag ttcgccaaga cctacgccac gcaggaggag cacgaccacc  240
gcttccgtat cttcaagaac aacttgctcc gcgccaagtc gcaccagaaa ttggacccct  300
ccgccgtcca cggcgtcacc aggttctccg atctcactcc gtctgagttt cgcggccagt  360
tcctcggcct gaagccgctc cgccttccct ccgacgctca gaaggctccg atccttccga  420
ccagcgacct tcctaccgat ttcgattggc gcgaccatgg agctgttacc ggcgtcaaga  480
atcagggctc gtgcggatgg tgttggtcat ttagcgccgt tggagctttg gaaggtgccc  540
attttctttc taccggtggg ctcgtgagcc tcagtgagca gcaacttgtg gattgcgatc  600
atgagtgtga tccggaagag cgtggagcat gtgattcggg ttgtaacggt gggttgatga  660
ccactgcatt tgagtacaca ctcaaggctg gtggactaat gcgagaagag gattatccct  720
acactggaag agaccgtggc ccctgcaaat ttgacaagag caaaatcgct gcttccgtgg  780
ctaatttcag tgtggtttcc cttgatgaag aacaaattgc tgcaaatctg gtcaagaatg  840
gtcctcttgc agttggtatc aatgcagttt ttatgcagac atatattggt ggcgtctcat  900
gcccatacat ctgcggcaag catttggatc atggggttct tttggtgggc tatggatctg  960
gtgcttatgc tccaattcgt tttaaggaaa agccttactg gatcataaag aattcatggg 1020
gggagagctg gggagaagaa ggatattaca agatctgcag aggtcgcaat gtatgtgggg 1080
tggactcgat ggtctcaact gtagctgcta tacatgtttc taaccattaa atataaggat 1140
ggatgcctaa acatggtagg ggcaccagta tagtgtgtat gtaaataatt tacatgatgt 1200
ataatgttat ggaggaggaa actgctaagc ccatgtttat gcttttatgc tgtaattctc 1260
tatgctagct agtctagcta caaatattac ccacggttat cgatagttat tgcaagtaac 1320
ctgaataaaa ttaatttgtg ttcccacaat taaaaaaaaa aaaaaaaaa              1369
```

<210> 24
<211> 366
<212> PRT
<213> Glycine max

<400> 24

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Met Ala Asn Leu Ser Leu Leu Phe Phe Gly Leu Leu Leu Phe Ser Ala
  1               5                  10                  15

Ala Val Ala Thr Val Glu Arg Ile Asp Asp Glu Asp Asn Leu Leu Ile
             20                  25                  30
```

```
Arg Gln Val Val Pro Asp Ala Glu Asp His His Leu Leu Asn Ala Glu
         35                  40                  45

His His Phe Ser Ala Phe Lys Thr Lys Phe Ala Lys Thr Tyr Ala Thr
     50                  55                  60

Gln Glu Glu His Asp His Arg Phe Arg Ile Phe Lys Asn Asn Leu Leu
 65                  70                  75                  80

Arg Ala Lys Ser His Gln Lys Leu Asp Pro Ser Ala Val His Gly Val
                 85                  90                  95

Thr Arg Phe Ser Asp Leu Thr Pro Ser Glu Phe Arg Gly Gln Phe Leu
            100                 105                 110

Gly Leu Lys Pro Leu Arg Leu Pro Ser Asp Ala Gln Lys Ala Pro Ile
        115                 120                 125

Leu Pro Thr Ser Asp Leu Pro Thr Asp Phe Asp Trp Arg Asp His Gly
    130                 135                 140

Ala Val Thr Gly Val Lys Asn Gln Gly Ser Cys Gly Trp Cys Trp Ser
145                 150                 155                 160

Phe Ser Ala Val Gly Ala Leu Glu Gly Ala His Phe Leu Ser Thr Gly
                165                 170                 175

Gly Leu Val Ser Leu Ser Glu Gln Gln Leu Val Asp Cys Asp His Glu
            180                 185                 190

Cys Asp Pro Glu Glu Arg Gly Ala Cys Asp Ser Gly Cys Asn Gly Gly
        195                 200                 205

Leu Met Thr Thr Ala Phe Glu Tyr Thr Leu Lys Ala Gly Gly Leu Met
    210                 215                 220

Arg Glu Glu Asp Tyr Pro Tyr Thr Gly Arg Asp Arg Gly Pro Cys Lys
225                 230                 235                 240

Phe Asp Lys Ser Lys Ile Ala Ala Ser Val Ala Asn Phe Ser Val Val
                245                 250                 255

Ser Leu Asp Glu Glu Gln Ile Ala Ala Asn Leu Val Lys Asn Gly Pro
            260                 265                 270

Leu Ala Val Gly Ile Asn Ala Val Phe Met Gln Thr Tyr Ile Gly Gly
        275                 280                 285

Val Ser Cys Pro Tyr Ile Cys Gly Lys His Leu Asp His Gly Val Leu
    290                 295                 300

Leu Val Gly Tyr Gly Ser Gly Ala Tyr Ala Pro Ile Arg Phe Lys Glu
305                 310                 315                 320

Lys Pro Tyr Trp Ile Ile Lys Asn Ser Trp Gly Glu Ser Trp Gly Glu
                325                 330                 335

Glu Gly Tyr Tyr Lys Ile Cys Arg Gly Arg Asn Val Cys Gly Val Asp
            340                 345                 350
```

```
Ser Met Val Ser Thr Val Ala Ala Ile His Val Ser Asn His
        355                 360                 365

<210>  25
<211>  441
<212>  DNA
<213>  Zea mays

<220>
<221>  unsure
<222>  (362)

<220>
<221>  unsure
<222>  (375)

<220>
<221>  unsure
<222>  (398)

<400>  25
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ggacttgctc agcgcatttc tacaggcgat gtacctgaaa caatagaagg gaaaaaggtc 120
ataacccttg acatgggact tcttgttgct ggcacaaagt accgtggaga attcgaagaa 180
agattaaaga agctgatgga ggaaataaag caaagtgatg agataatact ctttattgat 240
gaagttcaca ctctgatagg agcaggagca gcggaggtgc tatagatgct gctaatatct 300
tgaagcctgc gttgccagag gtgaattaca gtgcattgga gccactacac tagatgaata 360
tnggaagccc attgngaaag acccgccttg acggaggntt caacctgtga aagtgccaga 420
ccaacagtag atgaaaccat t                                          441

<210>  26
<211>  128
<212>  PRT
<213>  Zea mays

<220>
<221>  UNSURE
<222>  (121)

<220>
<221>  UNSURE
<222>  (125)

<400>  26
Lys Asn Asn Phe Cys Leu Ile Gly Glu Pro Gly Val Gly Lys Thr Ala
  1               5                  10                  15

Ile Ala Glu Gly Leu Ala Gln Arg Ile Ser Thr Gly Asp Val Pro Glu
             20                  25                  30

Thr Ile Glu Gly Lys Lys Val Ile Thr Leu Asp Met Gly Leu Leu Val
         35                  40                  45

Ala Gly Thr Lys Tyr Arg Gly Glu Phe Glu Glu Arg Leu Lys Lys Leu
     50                  55                  60

Met Glu Glu Ile Lys Gln Ser Asp Glu Ile Ile Leu Phe Ile Asp Glu
 65                  70                  75                  80
```

```
Val His Thr Leu Ile Gly Ala Gly Ala Ala Glu Gly Ala Ile Asp Ala
                 85                  90                  95

Ala Asn Ile Leu Glu Ala Cys Val Ala Arg Gly Glu Leu Gln Cys Ile
            100                 105                 110

Gly Ala Thr Thr Leu Asp Glu Tyr Xaa Lys Pro Ile Xaa Lys Asp Pro
        115                 120                 125
```

<210> 27
<211> 2471
<212> DNA
<213> Oryza sativa

<400> 27

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gctccgtgag ggtgaaggtg tagcagcccg tgtgctcgaa agccttggag ccgatcctag  180
caatattcgc acgcaggtta tccgaatgat tggcgagact acagaagctg ttggtgcagg  240
agttggagga gggagtagtg gcaataaaat gccaacactt gaggagtacg gaactaattt  300
aacaaaatta gcagaggagg gaaagctaga tcctgttgtt ggaaggcaac cccagattga  360
gcgtgtcgta caaattctgg gcagacgaac aaagaacaac ccatgcttaa ttggagagcc  420
tggtgttgga aagacagcaa ttgcagaagg ccttgctcaa cgcatttcta ctggtgatgt  480
gcctgaaaca attgaaggaa agaaggtcat tacccttgat atgggacttc ttgttgctgg  540
tacaaaatac cgtggagaat ttgaagaaag attaaagaag ctgatggaag aaatcaagca  600
gagtgatgag ataatactat ttattgatga agtccacact ctcataggag caggagcagc  660
tgagggtgct attgacgctg ctaacatttt aaagccagca ttagcaagag gagaactaca  720
gtgtattgga gccaccacac ttgatgaata caggaagcat attgagaaag acccagcatt  780
agaaagacgt ttccagcctg taagagtgcc agagccaaca gttgatgaaa ccatagaaat  840
tctcagaggg cttcgggaac gatatgagat ccatcataaa cttcgttaca ctgatgatgc  900
tctgatttca gctgccaagc tatcttatca atacatcagt gatcgtttcc tcccagataa  960
agcaattgat ttgattgatg aagcaggttc acgtgtaagg cttcgacatg cccaggttcc 1020
tgaagaagct agagagcttg acaaggagct caagcaaatc acaaaagata agaatgaagc 1080
tgtccgtagc caggacttcg aaaaggctgg agagttacgt gatcgtgaaa tggaattgaa 1140
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aggggagaca gggccactgg tcaatgaagc agatatccag cacattgtat cctcgtggac 1260
tggtattcca gtagagaagg tatcaagtga cgagtccgat aagcttctta agatggaaga 1320
gactttgcat cagcgtgtca ttggtcaaga tgaggctgtg aaagccataa gtcgctccat 1380
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atctgaggag gccatgatca ggcttgatat gagtgaattc atggagaggc acactgtatc 1560
caagttgatt ggttcacccc cagggtatgt tgggtacacg gagggtggac agctgactga 1620
ggcagttcga cgcaggccat acacagtcgt gcttttcgac gagatcgaaa aggcgcatcc 1680
agatgtattc aacatgatgc tccagatctt ggaagatgga aggctgactg acagcaaggg 1740
aagaacagtg gacttcaaga acacacttct cataatgact tcgaacgtcg gaagcagcgt 1800
catcgagaag ggtggtcgga agataggttt cgatctcgat tacgatgaga aggacagcag 1860
ctacagcagg atcaagagcc ttgtcgtcga ggagatgaag cagtacttcc gccccgagtt 1920
cctcaaccgt ctcgacgaga tgatcgtctt caggcaactc accaagctgg aggtcaagga 1980
gatcgccgag atcatgctca aggaggtctt tgacaggctc aaggccaagg acattgacct 2040
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tgcgaggccg ctaaggaggg ccatcatgag gctcctggag gacagcctcg cggagaagat 2160
gctagctggg gaggtgaagg agggtgattc tgccattgtc gatgtggatt ccgaggggaa 2220
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gtagtagttc atatatactg cagagtgtta agagatgcag tgcttttcat tcagatatat 2340
ttctgcatag ttagcaactt agcataactg tatatatagt atatacaaat caaaggagga 2400
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aaaaaaaaaa a                                                      2471
```

<210> 28
<211> 760

<212> PRT
<213> Oryza sativa

<400> 28

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Phe Val Ala Val Glu Ile Pro Phe Thr Pro Arg Ala Lys Arg Val Leu
  1               5                  10                  15

Glu Leu Ser Leu Glu Glu Ala Arg Gln Leu Gly His Asn Tyr Ile Gly
             20                  25                  30

Ser Glu His Leu Leu Leu Gly Leu Leu Arg Glu Gly Glu Gly Val Ala
         35                  40                  45

Ala Arg Val Leu Glu Ser Leu Gly Ala Asp Pro Ser Asn Ile Arg Thr
     50                  55                  60

Gln Val Ile Arg Met Ile Gly Glu Thr Thr Glu Ala Val Gly Ala Gly
 65                  70                  75                  80

Val Gly Gly Gly Ser Ser Gly Asn Lys Met Pro Thr Leu Glu Glu Tyr
                 85                  90                  95

Gly Thr Asn Leu Thr Lys Leu Ala Glu Glu Gly Lys Leu Asp Pro Val
            100                 105                 110

Val Gly Arg Gln Pro Gln Ile Glu Arg Val Val Gln Ile Leu Gly Arg
        115                 120                 125

Arg Thr Lys Asn Asn Pro Cys Leu Ile Gly Glu Pro Gly Val Gly Lys
    130                 135                 140

Thr Ala Ile Ala Glu Gly Leu Ala Gln Arg Ile Ser Thr Gly Asp Val
145                 150                 155                 160

Pro Glu Thr Ile Glu Gly Lys Lys Val Ile Thr Leu Asp Met Gly Leu
                165                 170                 175

Leu Val Ala Gly Thr Lys Tyr Arg Gly Glu Phe Glu Glu Arg Leu Lys
            180                 185                 190

Lys Leu Met Glu Glu Ile Lys Gln Ser Asp Glu Ile Ile Leu Phe Ile
        195                 200                 205

Asp Glu Val His Thr Leu Ile Gly Ala Gly Ala Ala Glu Gly Ala Ile
    210                 215                 220

Asp Ala Ala Asn Ile Leu Lys Pro Ala Leu Ala Arg Gly Glu Leu Gln
225                 230                 235                 240

Cys Ile Gly Ala Thr Thr Leu Asp Glu Tyr Arg Lys His Ile Glu Lys
                245                 250                 255

Asp Pro Ala Leu Glu Arg Arg Phe Gln Pro Val Arg Val Pro Glu Pro
            260                 265                 270

Thr Val Asp Glu Thr Ile Glu Ile Leu Arg Gly Leu Arg Glu Arg Tyr
        275                 280                 285

Glu Ile His His Lys Leu Arg Tyr Thr Asp Asp Ala Leu Ile Ser Ala
    290                 295                 300
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Ala Lys Leu Ser Tyr Gln Tyr Ile Ser Asp Arg Phe Leu Pro Asp Lys
305                 310                 315                 320

Ala Ile Asp Leu Ile Asp Glu Ala Gly Ser Arg Val Arg Leu Arg His
                325                 330                 335

Ala Gln Val Pro Glu Glu Ala Arg Glu Leu Asp Lys Glu Leu Lys Gln
            340                 345                 350

Ile Thr Lys Asp Lys Asn Glu Ala Val Arg Ser Gln Asp Phe Glu Lys
        355                 360                 365

Ala Gly Glu Leu Arg Asp Arg Glu Met Glu Leu Lys Ala Gln Ile Thr
    370                 375                 380

Ala Leu Ile Asp Lys Ser Lys Glu Met Ser Lys Ala Glu Thr Glu Ser
385                 390                 395                 400

Gly Glu Thr Gly Pro Leu Val Asn Glu Ala Asp Ile Gln His Ile Val
                405                 410                 415

Ser Ser Trp Thr Gly Ile Pro Val Glu Lys Val Ser Ser Asp Glu Ser
            420                 425                 430

Asp Lys Leu Leu Lys Met Glu Glu Thr Leu His Gln Arg Val Ile Gly
        435                 440                 445

Gln Asp Glu Ala Val Lys Ala Ile Ser Arg Ser Ile Arg Arg Ala Arg
    450                 455                 460

Val Gly Leu Lys Asn Pro Asn Arg Pro Ile Ala Ser Phe Ile Phe Ala
465                 470                 475                 480

Gly Pro Thr Gly Val Gly Lys Ser Glu Leu Ala Lys Ala Leu Ala Ala
                485                 490                 495

Tyr Tyr Phe Gly Ser Glu Glu Ala Met Ile Arg Leu Asp Met Ser Glu
            500                 505                 510

Phe Met Glu Arg His Thr Val Ser Lys Leu Ile Gly Ser Pro Pro Gly
        515                 520                 525

Tyr Val Gly Tyr Thr Glu Gly Gly Gln Leu Thr Glu Ala Val Arg Arg
    530                 535                 540

Arg Pro Tyr Thr Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Pro
545                 550                 555                 560

Asp Val Phe Asn Met Met Leu Gln Ile Leu Glu Asp Gly Arg Leu Thr
                565                 570                 575

Asp Ser Lys Gly Arg Thr Val Asp Phe Lys Asn Thr Leu Leu Ile Met
            580                 585                 590

Thr Ser Asn Val Gly Ser Ser Val Ile Glu Lys Gly Gly Arg Lys Ile
        595                 600                 605

Gly Phe Asp Leu Asp Tyr Asp Glu Lys Asp Ser Ser Tyr Ser Arg Ile
    610                 615                 620
```

```
Lys Ser Leu Val Val Glu Glu Met Lys Gln Tyr Phe Arg Pro Glu Phe
625                 630                 635                 640

Leu Asn Arg Leu Asp Glu Met Ile Val Phe Arg Gln Leu Thr Lys Leu
                645                 650                 655

Glu Val Lys Glu Ile Ala Glu Ile Met Leu Lys Glu Val Phe Asp Arg
            660                 665                 670

Leu Lys Ala Lys Asp Ile Asp Leu Gln Val Thr Glu Lys Phe Lys Glu
        675                 680                 685

Arg Ile Val Asp Glu Gly Phe Asn Pro Ser Tyr Gly Ala Arg Pro Leu
    690                 695                 700

Arg Arg Ala Ile Met Arg Leu Leu Glu Asp Ser Leu Ala Glu Lys Met
705                 710                 715                 720

Leu Ala Gly Glu Val Lys Glu Gly Asp Ser Ala Ile Val Asp Val Asp
                725                 730                 735

Ser Glu Gly Lys Val Ile Val Leu Asn Gly Gln Ser Gly Leu Pro Glu
            740                 745                 750

Leu Ser Thr Pro Ala Val Thr Val
        755                 760
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<210> 29
<211> 540
<212> DNA
<213> Triticum aestivum

<220>
<221> unsure
<222> (434)

<220>
<221> unsure
<222> (462)

<220>
<221> unsure
<222> (495)

<220>
<221> unsure
<222> (515)

<400> 29

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catgttgaac acatccggat gtgccttctc aatctcatca aaaagcacaa cgctgtatgg 180
ccgccgtcga accgcctccg tcagctgccc accttcagtg tatcccacat agcctggtgg 240
tgaaccgatc aacttggaca cagtgtgcct ctccatgaac tcactcatat ccagccggat 300
catggcttct tcagagccga agtaatatga tgccagagtc tttgcaagct ctgatttccc 360
aacaccagtg ggacctgcaa aaatgaagct cgcaattggt ctgttggggc tcttgagggc 420
cacacgagca cggngaacag accgacttat tgctttcaca gnctcgtctt gggcgatgac 480
acgcttatgc aatgnctcct tcaacctaaa gaagnttatc aaattcgcag tcgagacttt 540
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<210> 30
<211> 178
<212> PRT
<213> Triticum aestivum

<220>
<221> UNSURE
<222> (9)

<220>
<221> UNSURE
<222> (16)

<220>
<221> UNSURE
<222> (27)

<220>
<221> UNSURE
<222> (36)

<400> 30

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Lys Val Ser Thr Ala Asn Leu Ile Xaa Phe Phe Arg Leu Lys Glu Xaa
  1               5                  10                  15

Leu His Lys Arg Val Ile Ala Gln Asp Glu Xaa Val Lys Ala Ile Ser
             20                  25                  30

Arg Ser Val Xaa Arg Ala Arg Val Ala Leu Lys Ser Pro Asn Arg Pro
         35                  40                  45

Ile Ala Ser Phe Ile Phe Ala Gly Pro Thr Gly Val Gly Lys Ser Glu
     50                  55                  60

Leu Ala Lys Thr Leu Ala Ser Tyr Tyr Phe Gly Ser Glu Glu Ala Met
 65                  70                  75                  80

Ile Arg Leu Asp Met Ser Glu Phe Met Glu Arg His Thr Val Ser Lys
                 85                  90                  95

Leu Ile Gly Ser Pro Pro Gly Tyr Val Gly Tyr Thr Glu Gly Gly Gln
            100                 105                 110

Leu Thr Glu Ala Val Arg Arg Arg Pro Tyr Ser Val Val Leu Phe Asp
        115                 120                 125

Glu Ile Glu Lys Ala His Pro Asp Val Phe Asn Met Met Leu Gln Ile
    130                 135                 140

Leu Glu Asp Gly Arg Leu Thr Asp Ser Lys Gly Arg Thr Val Asp Phe
145                 150                 155                 160

Lys Asn Thr Leu Leu Ile Met Thr Ser Asn Val Gly Ser Ser Val Ile
                165                 170                 175

Glu Lys
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<210> 31
<211> 2050

<212> DNA
<213> Zea mays

<400> 31
ccacgcgtcc gccaagaaca atccctgctt gattggagag cctggtgttg gaaaaactgc 60
aattgctgaa ggacttgctc agcgcatttc tacaggcgat gtacctgaaa caatagaagg 120
gaaaaaggtc ataacccttg acatgggact tcttgttgct ggcacaaagt accgtggaga 180
attcgaagaa agattaaaga agctgatgga ggaaataaag caaagtgatg agataatact 240
ctttattgat gaagttcaca ctctgatagg agcaggagca gcggaggtgc tatagatgct 300
gctaatatct tgaagcctgc gttggccaga ggtgaattac agtgcattgg agccactaca 360
ctagatgaat ataggaagca cattgagaaa gacccagcac ttgaacggag gtttcaacct 420
gtgaaagtgc cagaaccaac agtagatgaa accattgaaa tcctcagagg actgagggaa 480
cgatatgaga tccaccataa acttcgttac actgatgaag ctctgattgc agctgcaaag 540
ctgtcatatc aatatatcag tgatcggttt ctcccagata aggcaattga cttgattgat 600
gaagcaggtt cccgtgttag gctacagcat gcacaggtcc ccgaggaagc aagagagctt 660
gacaaggagc tcaaacaagt cacgaaacag aagaatgaag ctgttcgaag ccaggatttt 720
gagaaggctg gggaattgag agaccgtgaa atggaattga aggcccagat aacagccctc 780
attgacaaga gcaaggaatt gagcaaagca gaggaagagt ctggagagac aggacctatg 840
gtcaatgaag aagatatcca gcacatagta tcttcatgga ctggcatccc tgtggagaag 900
gtttccagcg atgaatctga taagcttctt aagatggaag agactttgca caagcgtgtc 960
attggccaag atgaggctgt ggtagcaatt agtcgctcca tccgccgtgc tcgtgtgggt 1020
ctcaagaacc ccaacaggcc aattgcaagc tttatttttg ctggtcccac cggcgttggg 1080
aagtctgagc ttgcaaaggc tcttgcagcc tattactttg gctctgagga ggctatgatc 1140
cggcttgata tgagtgaatt catggagaga cacacggtat ccaagctgat tggttcacct 1200
ccaggatatg taggatacac tgagggtggc cagctgacag aggcagttcg acggcggcca 1260
tacacagttg tgctctttga tgagattgag aaggcacacc ctgatgtctt caacatgatg 1320
cttcagattt tggaagatgg gagattgact gacagcaagg gaaggacggt ggacttcaag 1380
aacacactcc tgatcatgac ctcaaatgta gggagcagtg tcatcgagaa gggtggaagg 1440
aagatcggat ttgaccttga ctctgatgag aaggacagta gctacagcag gatcaagagc 1500
ctggtcatcg aggagatgaa gcagtatttc cgacctgagt tcctcaaccg tctcgatgag 1560
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caggaggtct ttgacaggct gaaggccaag gacatcaatc ttcaagtgac cgagaagttc 1680
aaggagcggg tggtggacga aggctacaac cctagctatg gtgcacgccc gctgaggcga 1740
gccatcatga ggctgctgga ggacagcctt gctgagaaga tgctcgcagg ggaggtaaag 1800
gagggcgact ctgccatagt agatgtggac tcggagggga aggttgttgt gctcaatggt 1860
cagggcggca taccggagct ctcaactccg gcgatcaccg tttagctcgt acataacaaa 1920
tgacaaaatt aatagcatag tttttgttca aacacattat catttatggt tagaatatct 1980
gtgtatatgt agtggtatag tcaatgggga aatcgttcct gcctctaaaa aaaaaaaaaa 2040
aaaaaaaaag 2050

<210> 32
<211> 550
<212> PRT
<213> Zea mays

<400> 32
Ser Ser His Ser Asp Arg Ser Arg Ser Ser Gly Gly Ala Ile Asp Ala
1 5 10 15

Ala Asn Ile Leu Lys Pro Ala Leu Ala Arg Gly Glu Leu Gln Cys Ile
20 25 30

Gly Ala Thr Thr Leu Asp Glu Tyr Arg Lys His Ile Glu Lys Asp Pro
35 40 45

Ala Leu Glu Arg Arg Phe Gln Pro Val Lys Val Pro Glu Pro Thr Val
50 55 60

Asp Glu Thr Ile Glu Ile Leu Arg Gly Leu Arg Glu Arg Tyr Glu Ile
65 70 75 80

```
His His Lys Leu Arg Tyr Thr Asp Glu Ala Leu Ile Ala Ala Ala Lys
                  85                  90                  95

Leu Ser Tyr Gln Tyr Ile Ser Asp Arg Phe Leu Pro Asp Lys Ala Ile
            100                 105                 110

Asp Leu Ile Asp Glu Ala Gly Ser Arg Val Arg Leu Gln His Ala Gln
        115                 120                 125

Val Pro Glu Glu Ala Arg Glu Leu Asp Lys Glu Leu Lys Gln Val Thr
    130                 135                 140

Lys Gln Lys Asn Glu Ala Val Arg Ser Gln Asp Phe Glu Lys Ala Gly
145                 150                 155                 160

Glu Leu Arg Asp Arg Glu Met Glu Leu Lys Ala Gln Ile Thr Ala Leu
                165                 170                 175

Ile Asp Lys Ser Lys Glu Leu Ser Lys Ala Glu Glu Glu Ser Gly Glu
            180                 185                 190

Thr Gly Pro Met Val Asn Glu Glu Asp Ile Gln His Ile Val Ser Ser
        195                 200                 205

Trp Thr Gly Ile Pro Val Glu Lys Val Ser Ser Asp Glu Ser Asp Lys
    210                 215                 220

Leu Leu Lys Met Glu Glu Thr Leu His Lys Arg Val Ile Gly Gln Asp
225                 230                 235                 240

Glu Ala Val Val Ala Ile Ser Arg Ser Ile Arg Arg Ala Arg Val Gly
                245                 250                 255

Leu Lys Asn Pro Asn Arg Pro Ile Ala Ser Phe Ile Phe Ala Gly Pro
            260                 265                 270

Thr Gly Val Gly Lys Ser Glu Leu Ala Lys Ala Leu Ala Ala Tyr Tyr
        275                 280                 285

Phe Gly Ser Glu Glu Ala Met Ile Arg Leu Asp Met Ser Glu Phe Met
    290                 295                 300

Glu Arg His Thr Val Ser Lys Leu Ile Gly Ser Pro Pro Gly Tyr Val
305                 310                 315                 320

Gly Tyr Thr Glu Gly Gly Gln Leu Thr Glu Ala Val Arg Arg Arg Pro
                325                 330                 335

Tyr Thr Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Pro Asp Val
            340                 345                 350

Phe Asn Met Met Leu Gln Ile Leu Glu Asp Gly Arg Leu Thr Asp Ser
        355                 360                 365

Lys Gly Arg Thr Val Asp Phe Lys Asn Thr Leu Leu Ile Met Thr Ser
    370                 375                 380

Asn Val Gly Ser Ser Val Ile Glu Lys Gly Gly Arg Lys Ile Gly Phe
385                 390                 395                 400
```

```
Asp Leu Asp Ser Asp Glu Lys Asp Ser Ser Tyr Ser Arg Ile Lys Ser
                405                 410                 415

Leu Val Ile Glu Glu Met Lys Gln Tyr Phe Arg Pro Glu Phe Leu Asn
            420                 425                 430

Arg Leu Asp Glu Met Ile Val Phe Arg Gln Leu Thr Lys Leu Glu Val
        435                 440                 445

Lys Glu Ile Ala Asp Ile Met Leu Gln Glu Val Phe Asp Arg Leu Lys
    450                 455                 460

Ala Lys Asp Ile Asn Leu Gln Val Thr Glu Lys Phe Lys Glu Arg Val
465                 470                 475                 480

Val Asp Glu Gly Tyr Asn Pro Ser Tyr Gly Ala Arg Pro Leu Arg Arg
                485                 490                 495

Ala Ile Met Arg Leu Leu Glu Asp Ser Leu Ala Glu Lys Met Leu Ala
            500                 505                 510

Gly Glu Val Lys Glu Gly Asp Ser Ala Ile Val Asp Val Asp Ser Glu
        515                 520                 525

Gly Lys Val Val Val Leu Asn Gly Gln Gly Gly Ile Pro Glu Leu Ser
    530                 535                 540

Thr Pro Ala Ile Thr Val
545                 550
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<210> 33
<211> 740
<212> DNA
<213> Oryza sativa

<220>
<221> unsure
<222> (628)

<220>
<221> unsure
<222> (674)

<220>
<221> unsure
<222> (740)

<400> 33

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ggaagaagct cgtcagctag gacacaacta tattggatct gagcacttgc ttcttggact 120
gctccgtgag ggtgaaggtg tagcagcccg tgtgctcgaa agccttggag ccgatcctag 180
caatattcgc acgcaggtta tccgaatgat tggcgagact acagaagctg ttggtgcagg 240
agttggagga gggagtagtg gcaataaaat gccaacactt gaggagtacg gaactaattt 300
aacaaaatta gcagaggagg gaaagctaga tcctgttgtt ggaaggcaac cccagattga 360
gcgtgtcgta caaattctgg ggcagacgaa caaagaacaa cccatgcctt aattggagaa 420
cctggtgttt ggaaaagaca gcaattgcag aaggccttgc tcaacgcatt tctactggtg 480
atgtgcctga aacaattgaa ggaaagaagg tcattaccct tgatatggga cttcttgttg 540
ctggtacaaa ataccgtgga gaatttgaag aaagattaaa gaagctgatg gaagaaatca 600
agcagagtga tgagataata ctatttantg atgaagtcca cactctcata ggagcaggag 660
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caactgaggg tgcnattgac gctgctaaca ttttaagcca cattacaaga ggagaactac 720
atgttttgga gccacacacn 740

<210> 34
<211> 298
<212> PRT
<213> Oryza sativa

<220>
<221> UNSURE
<222> (65)..(66)..(67)..(68)

<220>
<221> UNSURE
<222> (276)

<400> 34
Phe Thr Pro Arg Ala Lys Arg Val Leu Glu Leu Ser Leu Glu Glu Ala
1 5 10 15

Arg Gln Leu Gly His Asn Tyr Ile Gly Ser Glu His Leu Leu Leu Gly
20 25 30

Leu Leu Arg Glu Gly Glu Gly Val Ala Ala Arg Val Leu Glu Ser Leu
35 40 45

Gly Ala Asp Pro Ser Asn Ile Arg Thr Gln Val Ile Arg Met Ile Gly
50 55 60

Xaa Xaa Xaa Xaa Phe Val Ala Val Glu Ile Pro Phe Thr Pro Arg Ala
65 70 75 80

Lys Arg Val Leu Glu Leu Ser Leu Glu Glu Ala Arg Gln Leu Gly His
85 90 95

Asn Tyr Ile Gly Ser Glu His Leu Leu Leu Gly Leu Leu Arg Glu Gly
100 105 110

Glu Gly Val Ala Ala Arg Val Leu Glu Ser Leu Gly Ala Asp Pro Ser
115 120 125

Asn Ile Arg Thr Gln Val Ile Arg Met Ile Gly Glu Thr Thr Glu Ala
130 135 140

Val Gly Ala Gly Val Gly Gly Gly Ser Ser Gly Asn Lys Met Pro Thr
145 150 155 160

Leu Glu Glu Tyr Gly Thr Asn Leu Thr Lys Leu Ala Glu Glu Gly Lys
165 170 175

Leu Asp Pro Val Val Gly Arg Gln Pro Arg Leu Ser Val Ser Tyr Lys
180 185 190

Phe Trp Gly Arg Arg Thr Lys Asn Asn Pro Cys Leu Ile Gly Glu Pro
195 200 205

Gly Val Trp Lys Thr Ala Ile Ala Glu Gly Leu Ala Gln Arg Ile Ser
210 215 220

```
Thr Gly Asp Val Pro Glu Thr Ile Glu Gly Lys Lys Val Ile Thr Leu
225                 230                 235                 240

Asp Met Gly Leu Leu Val Ala Gly Thr Lys Tyr Arg Gly Glu Phe Glu
                245                 250                 255

Glu Arg Leu Lys Lys Leu Met Glu Glu Ile Lys Gln Ser Asp Glu Ile
            260                 265                 270

Ile Leu Phe Xaa Asp Glu Val His Thr Leu Ile Gly Ala Gly Ala Thr
        275                 280                 285

Glu Gly Ala Ile Asp Ala Ala Asn Ile Leu
    290                 295
```

<210> 35
<211> 1205
<212> DNA
<213> Triticum aestivum

<400> 35

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ctcgtgccga attcggcacg aggtggacta ctatattttg aattctctta atgctgatag   60
agcaacccaa ctgtttaaaa acttcatgtg ggatgttaat ccaccatatt taacttgttt  120
agagtgttca ttgatataat tggaagatga catgtaattt catagtatga tctaggcgtt  180
cttgtcggtg cggtcggtct cagttgatga taaaaaatgt ttgtcatact tctgacatta  240
aatagttatc actgcaagta aattattact agtgtccttg aacctgcctt ttctctagca  300
taaaaaccgc actagtgtat gtttattcta ttcatgtggg ttgatgatct caactttctg  360
gatgccaacc accatatatc tgcactttct ttgatataga tgctaactaa tagttgctat  420
taatatattc cctttatcga aaaaaaacta atggttgctg tgcctgttgc aatgttatgc  480
cattaggctg gagagttgcg agatcgtgaa atggaattga aggcgccaga taacagcctt  540
gattgacaag agcaaggaga tgaacaaagc agagactgag tcgggagaga cggggccgat  600
ggtgcatgaa tcagatatcc agcacattgt gtcatcatgg actggtattc cagtggagaa  660
agtctcgact gacgaatctg ataaacttct taagatggaa gagacattgc ataagcgtgt  720
catcggccaa gacgaggctg tgaaagcaat aagtcggtct gttcgccgtg ctcgtgtggg  780
cctcaagagc cccaacagac caattgcgag cttcattttt gcaggtccca ctggtgttgg  840
gaaatcagag cttgcaaaga ctctggcatc atattacttc ggctctgaag aagccatgat  900
ccggctggat atgagtgagt tcatggagag gcacactgtg tccaagttga tcggttcacc  960
accaggctat gtgggataca ctgaaggtgg gcagctgacg gaggcggttc gacggcggcc 1020
atacagcgtt gtgctttttg atgagattga gaaggcacat ccggatgtgt tcaacatgat 1080
gctccagatc ctggaagacg gaaggttaac cgacagcaag gggagaacag tggacttcaa 1140
gaacacgctc ctgataatga catcaaatgt tgggagcagc gtgattgaga agaagaagct 1200
cgtgc                                                             1205
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<210> 36
<211> 239
<212> PRT
<213> Triticum aestivum

<400> 36

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Ala Gly Glu Leu Arg Asp Arg Glu Met Glu Leu Arg Arg Gln Ile Thr
  1               5                  10                  15

Ala Leu Ile Asp Lys Ser Lys Glu Met Asn Lys Ala Glu Thr Glu Ser
             20                  25                  30

Gly Glu Thr Gly Pro Met Val His Glu Ser Asp Ile Gln His Ile Val
         35                  40                  45

Ser Ser Trp Thr Gly Ile Pro Val Glu Lys Val Ser Thr Asp Glu Ser
     50                  55                  60
```

```
Asp Lys Leu Leu Lys Met Glu Glu Thr Leu His Lys Arg Val Ile Gly
 65                  70                  75                  80

Gln Asp Glu Ala Val Lys Ala Ile Ser Arg Ser Val Arg Arg Ala Arg
                 85                  90                  95

Val Gly Leu Lys Ser Pro Asn Arg Pro Ile Ala Ser Phe Ile Phe Ala
            100                 105                 110

Gly Pro Thr Gly Val Gly Lys Ser Glu Leu Ala Lys Thr Leu Ala Ser
        115                 120                 125

Tyr Tyr Phe Gly Ser Glu Glu Ala Met Ile Arg Leu Asp Met Ser Glu
    130                 135                 140

Phe Met Glu Arg His Thr Val Ser Lys Leu Ile Gly Ser Pro Pro Gly
145                 150                 155                 160

Tyr Val Gly Tyr Thr Glu Gly Gly Gln Leu Thr Glu Ala Val Arg Arg
                165                 170                 175

Arg Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Pro
            180                 185                 190

Asp Val Phe Asn Met Met Leu Gln Ile Leu Glu Asp Gly Arg Leu Thr
        195                 200                 205

Asp Ser Lys Gly Arg Thr Val Asp Phe Lys Asn Thr Leu Leu Ile Met
    210                 215                 220

Thr Ser Asn Val Gly Ser Ser Val Ile Glu Lys Lys Lys Leu Val
225                 230                 235
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<210> 37
<211> 498
<212> DNA
<213> Zea mays

<220>
<221> unsure
<222> (327)

<220>
<221> unsure
<222> (350)

<220>
<221> unsure
<222> (359)

<220>
<221> unsure
<222> (372)

<220>
<221> unsure
<222> (397)

<220>
<221> unsure
<222> (423)

<220>
<221> unsure
<222> (448)

<220>
<221> unsure
<222> (459)

<220>
<221> unsure
<222> (486)

<220>
<221> unsure
<222> (492)

<400> 37
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caggggatc ccttagcgca acaatggcca tctatgatgt aatgcagctt gtgagggcag 120
acgtgtccac tattggaatg ggcatagctg gatcaacagc ttctataatc cttggtggtg 180
gcacgaaggg caagcgattt gccatgccca acaccaggat tatgatccat cagcctgtcg 240
gaggtgcaag cgggcaggcc ctagatgtag aggtccaagc gaaggagata ttgaccaaca 300
agaggaatgt tcatcggatc gtatcangct tcacaggccg cactcctgan ccagtagana 360
aagacttgac anagatcgta caggggcctc tcgaggngtc gataggatca tgatgctgat 420
cgntgagaat atatccattg agctgtcnga gaggtgaanc taatacatag aagacgtaca 480
gtcacnagtt cntacaca 498

<210> 38
<211> 113
<212> PRT
<213> Zea mays

<220>
<221> UNSURE
<222> (109)

<400> 38
Leu Leu Leu Leu Asp Ala Ile Asp Pro Asp Ser Asp Ile Arg Leu Phe
1 5 10 15

Val Asn Ser Pro Gly Gly Ser Leu Ser Ala Thr Met Ala Ile Tyr Asp
20 25 30

Val Met Gln Leu Val Arg Ala Asp Val Ser Thr Ile Gly Met Gly Ile
35 40 45

Ala Gly Ser Thr Ala Ser Ile Ile Leu Gly Gly Gly Thr Lys Gly Lys
50 55 60

Arg Phe Ala Met Pro Asn Thr Arg Ile Met Ile His Gln Pro Val Gly
65 70 75 80

Gly Ala Ser Gly Gln Ala Leu Asp Val Glu Val Gln Ala Lys Glu Ile
85 90 95

Leu Thr Asn Lys Arg Asn Val His Arg Ile Val Ser Xaa Phe Thr Gly
100 105 110

Arg

<210> 39
<211> 459
<212> DNA
<213> Oryza sativa

<400> 39
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gccgccggcg cgcgcgggga gcgccgggcg ctgcccaacg cgcgggtcat gattcaccag 120
ccatccgggg gcgcgcaggg ccaggccacc gacatcgcca tccaggccaa ggagattctc 180
aagctgcgcg accgcctcaa caagatctac cagaagcaca ccggccagga gatcgacaag 240
atcgagcagt gcatggagcg cgacctcttc atggaccccg aggaggcgcg cgattggggg 300
ctcatcgacg aggtaattga gaaccgcccc gcgtccctga tacccgaggg cgccactggc 360
gttgacctgc cgcaccacag cgccgctggc gtcggcggaa ggggcagaga tgtcgaggag 420
ccctccgcgg tgtgagctgt ggccgcaaag gtgaaacct 459

<210> 40
<211> 109
<212> PRT
<213> Oryza sativa

<400> 40
Arg Cys Pro Val Thr Thr Leu Cys Ile Gly Gln Ala Ala Ser Met Gly
1 5 10 15

Ser Leu Leu Leu Ala Ala Gly Ala Arg Gly Glu Arg Arg Ala Leu Pro
20 25 30

Asn Ala Arg Val Met Ile His Gln Pro Ser Gly Gly Ala Gln Gly Gln
35 40 45

Ala Thr Asp Ile Ala Ile Gln Ala Lys Glu Ile Leu Lys Leu Arg Asp
50 55 60

Arg Leu Asn Lys Ile Tyr Gln Lys His Thr Gly Gln Glu Ile Asp Lys
65 70 75 80

Ile Glu Gln Cys Met Glu Arg Asp Leu Phe Met Asp Pro Glu Glu Ala
85 90 95

Arg Asp Trp Gly Leu Ile Asp Glu Val Ile Glu Asn Arg
100 105

<210> 141
<211> 466
<212> DNA
<213> Glycine max

<400> 41
ggagcgtttc cagagtgtta taagtcagct tttccaatac aggataatcc gttgtggtgg 60
agcagttgat gacgatatgg caaacatcat agttgctcag ctcctgtacc tcgacgctgt 120
tgatcctaac aaggatattg tcatgtatgt aaattctcca ggagggtcgg ttacagctgg 180
aatggctata tttgatacaa tgaggcatat ccgacctgat gtgtctactg tttgtgttgg 240
attagcagct agtatgggag cttttctgct gagcgcaggg acaaaaggaa agagatacag 300
cttgccaaat tcaaggataa tgattcatca accgcttggt ggtgctcaag gagggcaaac 360

tgacatagat attcaggcta atgaaatgct gcatcaaaag gcaaatctga atggatatct 420
cgcctatcac actggccaaa gtttagacaa agatcaacca agatac 466

<210> 42
<211> 150
<212> PRT
<213> Glycine max

<400> 42
Glu Arg Phe Gln Ser Val Ile Ser Gln Leu Phe Gln Tyr Arg Ile Ile
1 5 10 15

Arg Cys Gly Gly Ala Val Asp Asp Asp Met Ala Asn Ile Ile Val Ala
20 25 30

Gln Leu Leu Tyr Leu Asp Ala Val Asp Pro Asn Lys Asp Ile Val Met
35 40 45

Tyr Val Asn Ser Pro Gly Gly Ser Val Thr Ala Gly Met Ala Ile Phe
50 55 60

Asp Thr Met Arg His Ile Arg Pro Asp Val Ser Thr Val Cys Val Gly
65 70 75 80

Leu Ala Ala Ser Met Gly Ala Phe Leu Leu Ser Ala Gly Thr Lys Gly
85 90 95

Lys Arg Tyr Ser Leu Pro Asn Ser Arg Ile Met Ile His Gln Pro Leu
100 105 110

Gly Gly Ala Gln Gly Gly Gln Thr Asp Ile Asp Ile Gln Ala Asn Glu
115 120 125

Met Leu His Gln Lys Ala Asn Leu Asn Gly Tyr Leu Ala Tyr His Thr
130 135 140

Gly Gln Ser Leu Asp Lys
145 150

<210> 43
<211> 617
<212> DNA
<213> Triticum aestivum

<220>
<221> unsure
<222> (358)

<220>
<221> unsure
<222> (402)

<220>
<221> unsure
<222> (410)

<220>
<221> unsure
<222> (439)

<220>
<221> unsure
<222> (447)

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<220>
<221> unsure
<222> (571)

<220>
<221> unsure
<222> (574)

<220>
<221> unsure
<222> (600)

<220>
<221> unsure
<222> (602)

<400> 43
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gccgttgatc ctaacaagga tatcattatg tatgtgaact ctccaggagg atcagtgaca 120
gctgggatgg ccatatttga tacaatgaag catatcaggc ctgatgtttc gacagtttgt 180
atcggacttg ctgcaagtat gggtgctttt ctacttagcg gtgggacgaa agggaagagg 240
tacagcttac ctaactcaag aataatgatc catcagcctc ttgggaggag cccaaggaca 300
agagaccgac cttgagattc caaggccaaa tgagatgctg caccacaagg ccaacttnta 360
acggatacct agcataccac actgggcagc ccctggataa gncaatgtan atactgaccg 420
tgacttcctc aagagcgcna aaggagnaaa ggagtatggg ccttattgat ggagtaatcg 480
tgaaccctct taaancgctg caaccactcc agctccagtt agccatccgt gcacaaaatc 540
tatgccgctc aagcaatttt gtgtgatctc nganttgtgt tgtacacctg ttttcgtagn 600
cngctaaatg ctttgat 617

<210> 44
<211> 95
<212> PRT
<213> Triticum aestivum

<400> 44
Gly Gly Pro Val Glu Asp Asp Met Ala Asn Val Ile Val Ala Gln Leu
1 5 10 15

Leu Tyr Leu Asp Ala Val Asp Pro Asn Lys Asp Ile Ile Met Tyr Val
20 25 30

Asn Ser Pro Gly Gly Ser Val Thr Ala Gly Met Ala Ile Phe Asp Thr
35 40 45

Met Lys His Ile Arg Pro Asp Val Ser Thr Val Cys Ile Gly Leu Ala
50 55 60

Ala Ser Met Gly Ala Phe Leu Leu Ser Gly Gly Thr Lys Gly Lys Arg
65 70 75 80

Tyr Ser Leu Pro Asn Ser Arg Ile Met Ile His Gln Pro Leu Gly
85 90 95

<210> 45
<211> 521
<212> DNA
<213> Triticum aestivum

<220>
<221> unsure
<222> (384)

<220>
<221> unsure
<222> (469)

<400> 45
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cagtacatcc gctgccccgt caacaccatc tgcatcggcc aggccgcctc catgggctcc 120
ctcctcctcg ccgccggcgc gcgcggggag aggcgggcgc tgcccaacgc cagggtcatg 180
atccaccagc cctccggcgg ggcccagggc caggccaccg acatcgccat ccaggccaag 240
gagatactca aagctgcgcg accgcctcaa caagatctac gccaagcaca cgggccaaga 300
acatcgacaa gatcgagcag tgcatggagc gtgacctttt catggacccc cgaggaggcc 360
gcgaatgggg ggtttataga cgangtcatc gagaacgccc ggctccctca tcctgatggc 420
tcatgccgtt gaccgcctca cacggtgggg gccccgcgcc aacggcgtng caaggaaagg 480
atatggagga cctccgcgta taagggtggc aagcacaaag g 521

<210> 46
<211> 84
<212> PRT
<213> Triticum aestivum

<400> 46
Leu Tyr Ile Asn Ser Pro Gly Gly Val Val Thr Ala Gly Leu Ala Ile
1 5 10 15

Tyr Asp Thr Met Gln Tyr Ile Arg Cys Pro Val Asn Thr Ile Cys Ile
20 25 30

Gly Gln Ala Ala Ser Met Gly Ser Leu Leu Leu Ala Ala Gly Ala Arg
35 40 45

Gly Glu Arg Arg Ala Leu Pro Asn Ala Arg Val Met Ile His Gln Pro
50 55 60

Ser Gly Gly Ala Gln Gly Gln Ala Thr Asp Ile Ala Ile Gln Ala Lys
65 70 75 80

Glu Ile Leu Lys

<210> 47
<211> 900
<212> DNA
<213> Zea mays

<400> 47
ccacgcgtcc gagctcctcc tccttgacgc catcgacccg gactctgaca tccgcctctt 60
cgtcaactca ccaggggat cccttagcgc aacaatggcc atctatgatg taatgcagct 120
tgtgagggca gacgtgtcca ctattggaat gggcatagct ggatcaacag cttctataat 180
ccttggtggt ggcacgaagg gcaagcgatt tgccatgccc aacaccagga ttatgatcca 240
tcagcctgtc ggaggtgcaa gcgggcaggc cctagatgta gaggtccaag cgaaggagat 300

attgaccaac aagaggaatg tcattcggat cgtatcaggc ttcacaggcc gcactcctga 360
gcaggtagag aaagacattg acagagatcg ttacatgggc cctctcgagg ctgtcgatta 420
tggactcatt gatggcgtga tcgatggaga cagtattatc ccacttgagc ctgtcccgga 480
gagggtgaag cctaagtaca actacgaaga gctgtacaag gatccacaga agtttcttac 540
accagatgtc ccagatgatg agatatacta gtcgaaaagt tgtattttgt gcgaatgtta 600
agtctgttct tcagcaagca gatgtttttc gtcgcttgta gctgtcaaac caaccatagc 660
actagtagct tattgatctt gtttactgac tggatggtga ttcgagcagg caactagaac 720
ctgttggttg tgtttctggt gttacattgt ggtgttagaa tggtccggct gtttcgtttt 780
gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 840
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900

<210> 48
<211> 189
<212> PRT
<213> Zea mays

<400> 48
His Ala Ser Glu Leu Leu Leu Leu Asp Ala Ile Asp Pro Asp Ser Asp
1 5 10 15

Ile Arg Leu Phe Val Asn Ser Pro Gly Gly Ser Leu Ser Ala Thr Met
20 25 30

Ala Ile Tyr Asp Val Met Gln Leu Val Arg Ala Asp Val Ser Thr Ile
35 40 45

Gly Met Gly Ile Ala Gly Ser Thr Ala Ser Ile Ile Leu Gly Gly Gly
50 55 60

Thr Lys Gly Lys Arg Phe Ala Met Pro Asn Thr Arg Ile Met Ile His
65 70 75 80

Gln Pro Val Gly Gly Ala Ser Gly Gln Ala Leu Asp Val Glu Val Gln
85 90 95

Ala Lys Glu Ile Leu Thr Asn Lys Arg Asn Val Ile Arg Ile Val Ser
100 105 110

Gly Phe Thr Gly Arg Thr Pro Glu Gln Val Glu Lys Asp Ile Asp Arg
115 120 125

Asp Arg Tyr Met Gly Pro Leu Glu Ala Val Asp Tyr Gly Leu Ile Asp
130 135 140

Gly Val Ile Asp Gly Asp Ser Ile Ile Pro Leu Glu Pro Val Pro Glu
145 150 155 160

Arg Val Lys Pro Lys Tyr Asn Tyr Glu Glu Leu Tyr Lys Asp Pro Gln
165 170 175

Lys Phe Leu Thr Pro Asp Val Pro Asp Asp Glu Ile Tyr
180 185

<210> 49
<211> 690
<212> DNA
<213> Oryza sativa

<400> 49
cgctgccccg tcaccacgct ctgcatcggc caggccgcgt ccatgggctc cctcctgctc 60
gccgccggcg cgcgcgggga gcgccgggcg ctgcccaacg cgcgggtcat gattcaccag 120
ccatccgggg gcgcgcaggg ccaggccacc gacatcgcca tccaggccaa ggagattctc 180
aagctgcgcg accgcctcaa caagatctac cagaagcaca ccggccagga gatcgacaag 240
atcgagcagt gcatggagcg cgacctcttc atggaccccg aggaggcgcg cgattggggg 300
ctcatcgacg aggtaattga gaaccgcccc gcgtccctga tacccgaggg cgccactggc 360
gttgacctgc cgcaccacag cgccgctggc gtcggcggaa ggggcagaga tgtcgaggag 420
ccctccgcgg tgtgagctgt ggccgcaaag gtgaaacctt ttcgtgtccc atggccatgt 480
tgttgttgtt attagatcca aggttcagtt cttatactac ataaacttaa cttgttatta 540
ttcaggttgc cacttgttat tcaggttgcc gatgtgttcg gctccttaca tgttgtcttg 600
attgcctgaa ttgagctact gctgatattt attgcaaatc taaggaaatt ttattccttc 660
catactgata aaaaaaaaaa aaaaaaaaaa 690

<210> 50
<211> 144
<212> PRT
<213> Oryza sativa

<400> 50
Arg Cys Pro Val Thr Thr Leu Cys Ile Gly Gln Ala Ala Ser Met Gly
1 5 10 15

Ser Leu Leu Leu Ala Ala Gly Ala Arg Gly Glu Arg Arg Ala Leu Pro
20 25 30

Asn Ala Arg Val Met Ile His Gln Pro Ser Gly Gly Ala Gln Gly Gln
35 40 45

Ala Thr Asp Ile Ala Ile Gln Ala Lys Glu Ile Leu Lys Leu Arg Asp
50 55 60

Arg Leu Asn Lys Ile Tyr Gln Lys His Thr Gly Gln Glu Ile Asp Lys
65 70 75 80

Ile Glu Gln Cys Met Glu Arg Asp Leu Phe Met Asp Pro Glu Glu Ala
85 90 95

Arg Asp Trp Gly Leu Ile Asp Glu Val Ile Glu Asn Arg Pro Ala Ser
100 105 110

Leu Ile Pro Glu Gly Ala Thr Gly Val Asp Leu Pro His His Ser Ala
115 120 125

Ala Gly Val Gly Gly Arg Gly Arg Asp Val Glu Glu Pro Ser Ala Val
130 135 140

<210> 51
<211> 874
<212> DNA
<213> Glycine max

<400> 51
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gtggtggagc agttgatgac gatatggcaa acatcatagt tgctcagctc ctgtacctcg 120
acgctgttga tcctaacaag gatattgtca tgtatgtaaa ttctccagga gggtcggtta 180
cagctggaat ggctatattt gatacaatga ggcatatccg acctgatgtg tctactgttt 240
gtgttggatt agcagctagt atgggagctt ttctgctgag cgcagggaca aaaggaaaga 300
gatacagctt gccaaattca aggataatga ttcatcaacc gcttggtggt gctcaaggag 360
ggcaaactga catagatatt caggctaatg aaatgctgca tcataaggca aatctgaatg 420

gatatctcgc ctatcacact ggccaaagtt tagacaagat caaccaggat acagaccgtg 480
acttttttcat gagtgcaaaa gaagccaagg aatatggact catagatggt gtcattatga 540
atcctctcaa agctctccag ccattagagg ctgcagcaga aggtaaagac cgggctagtg 600
tttgaacatg agaatgttgc actttaattt ccaaggtata aaaaatcata gtgttagact 660
gtaagatgtt tttggttgct gagtccaact taatttttt ttacggatgt tgatacctgt 720
gcccatgtac caaaaatgag gcgaaattga tactatttat ttaatattca ctgcttcaga 780
gtttatactg acagaaggtt ctttaatgga acctgaatgt gattttaact tcaagcattc 840
ttttgtgatg aactgaaaaa aaaaaaaaaa aaaa 874

<210> 52
<211> 200
<212> PRT
<213> Glycine max

<400> 52
Thr Arg Glu Arg Phe Gln Ser Val Ile Ser Gln Leu Phe Gln Tyr Arg
1 5 10 15

Ile Ile Arg Cys Gly Gly Ala Val Asp Asp Asp Met Ala Asn Ile Ile
20 25 30

Val Ala Gln Leu Leu Tyr Leu Asp Ala Val Asp Pro Asn Lys Asp Ile
35 40 45

Val Met Tyr Val Asn Ser Pro Gly Gly Ser Val Thr Ala Gly Met Ala
50 55 60

Ile Phe Asp Thr Met Arg His Ile Arg Pro Asp Val Ser Thr Val Cys
65 70 75 80

Val Gly Leu Ala Ala Ser Met Gly Ala Phe Leu Leu Ser Ala Gly Thr
85 90 95

Lys Gly Lys Arg Tyr Ser Leu Pro Asn Ser Arg Ile Met Ile His Gln
100 105 110

Pro Leu Gly Gly Ala Gln Gly Gly Gln Thr Asp Ile Asp Ile Gln Ala
115 120 125

Asn Glu Met Leu His His Lys Ala Asn Leu Asn Gly Tyr Leu Ala Tyr
130 135 140

His Thr Gly Gln Ser Leu Asp Lys Ile Asn Gln Asp Thr Asp Arg Asp
145 150 155 160

Phe Phe Met Ser Ala Lys Glu Ala Lys Glu Tyr Gly Leu Ile Asp Gly
165 170 175

Val Ile Met Asn Pro Leu Lys Ala Leu Gln Pro Leu Glu Ala Ala Ala
180 185 190

Glu Gly Lys Asp Arg Ala Ser Val
195 200

<210> 53
<211> 755
<212> DNA
<213> Triticum aestivum

<400> 53
gcacgagggc ggtcctgtgg aggatgatat ggccaacgtc attgttgcgc agctgctata 60
cctggacgcc gttgatccta acaaggatat cattatgtat gtgaactctc caggaggatc 120
agtgacagct gggatggcca tatttgatac aatgaagcat atcaggcctg atgtttcgac 180
agtttgtatc ggacttgctg caagtatggg tgcttttcta cttagcggtg ggacgaaagg 240
gaagaggtac agcttaccta actcaagaat aatgatccat cagcctcttg gaggagccca 300
aggacaagag accgaccttg agatccaggc caatgagatg ctgcaccaca aggccaactt 360
gaacggatac ctagcatacc acactgggca gcccctggat aagatcaatg tagatactga 420
ccgtgacttc ttcatgagcg cgaaggaggc aaaggagtat ggccttattg atggagtaat 480
cgtgaaccct cttaaagcgc tgcaaccact tccagcttcc agttagccat gccgtgcaca 540
aaatctatgc cgctccaagc atttttgttg tgatcttctg gagttgtgtt tgtaccacgc 600
tgttttcgtt agtctggcta gatgcttttg taatttcacg ttctgaagct ttcacaggtt 660
gtacggaaca gatgcactac tagaatgttc atcgtttgcg gtaagatgtt tgcacgtgag 720
tcgacgttgt ttttgttaaa aaaaaaaaaa aaaaa 755

<210> 54
<211> 174
<212> PRT
<213> Triticum aestivum

<400> 54
His Glu Gly Gly Pro Val Glu Asp Asp Met Ala Asn Val Ile Val Ala
1 5 10 15

Gln Leu Leu Tyr Leu Asp Ala Val Asp Pro Asn Lys Asp Ile Ile Met
20 25 30

Tyr Val Asn Ser Pro Gly Gly Ser Val Thr Ala Gly Met Ala Ile Phe
35 40 45

Asp Thr Met Lys His Ile Arg Pro Asp Val Ser Thr Val Cys Ile Gly
50 55 60

Leu Ala Ala Ser Met Gly Ala Phe Leu Leu Ser Gly Gly Thr Lys Gly
65 70 75 80

Lys Arg Tyr Ser Leu Pro Asn Ser Arg Ile Met Ile His Gln Pro Leu
85 90 95

Gly Gly Ala Gln Gly Gln Glu Thr Asp Leu Glu Ile Gln Ala Asn Glu
100 105 110

Met Leu His His Lys Ala Asn Leu Asn Gly Tyr Leu Ala Tyr His Thr
115 120 125

Gly Gln Pro Leu Asp Lys Ile Asn Val Asp Thr Asp Arg Asp Phe Phe
130 135 140

Met Ser Ala Lys Glu Ala Lys Glu Tyr Gly Leu Ile Asp Gly Val Ile
145 150 155 160

Val Asn Pro Leu Lys Ala Leu Gln Pro Leu Pro Ala Ser Ser
165 170

<210> 55
<211> 788
<212> DNA
<213> Triticum aestivum

<400> 55
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acaccatgca gtacatccgc tgccccgtca acaccatctg catcggccag gccgcctcca 120
tgggctccct cctcctcgcc gccggcgcgc gcggggagag gcgggcgctg cccaacgcca 180
gggtcatgat ccaccagccc tccggcgggg cccagggcca ggccaccgac atcgccatcc 240
aggccaagga gatactcaag ctgcgcgacc gcctcaacaa gatctacgcc aagcacacgg 300
gccagaacat cgacaagatc gagcagtgca tggagcgtga ccttttcatg gaccccgagg 360
aggcccgcga atgggggctt atagacgagg tcatcgagaa ccgcccggcc tccctcatgc 420
ctgatggcct cagtgccgtt gacccgcctc accacggtgg gggcgccggc gccaacggcc 480
gtggcaggga cagggatatg gaggagccct ccgcggtatg aggggtggcc aggccacaaa 540
ggtgaaacct ttttctgagt ccggtggcta tgttgtttgt tgttagatct aagttttgat 600
tcctaataca acaggtcaac ttggtatcct cttcctgttg tttcaattgc ctgaactgag 660
ctattgccga tatttattgc aactcgtaaa aaggaatttc gttcctttga tactgataaa 720
ttgatagtgt ggtgaatatc agttatacga tcaatttcaa gtcacagcaa aaaaaaaaaa 780
aaaaaaaa 788

<210> 56
<211> 172
<212> PRT
<213> Triticum aestivum

<400> 56
Ile Ser Leu Tyr Ile Asn Ser Pro Gly Gly Val Val Thr Ala Gly Leu
1 5 10 15

Ala Ile Tyr Asp Thr Met Gln Tyr Ile Arg Cys Pro Val Asn Thr Ile
20 25 30

Cys Ile Gly Gln Ala Ala Ser Met Gly Ser Leu Leu Leu Ala Ala Gly
35 40 45

Ala Arg Gly Glu Arg Arg Ala Leu Pro Asn Ala Arg Val Met Ile His
50 55 60

Gln Pro Ser Gly Gly Ala Gln Gly Gln Ala Thr Asp Ile Ala Ile Gln
65 70 75 80

Ala Lys Glu Ile Leu Lys Leu Arg Asp Arg Leu Asn Lys Ile Tyr Ala
85 90 95

Lys His Thr Gly Gln Asn Ile Asp Lys Ile Glu Gln Cys Met Glu Arg
100 105 110

Asp Leu Phe Met Asp Pro Glu Glu Ala Arg Glu Trp Gly Leu Ile Asp
115 120 125

Glu Val Ile Glu Asn Arg Pro Ala Ser Leu Met Pro Asp Gly Leu Ser
130 135 140

Ala Val Asp Pro Pro His His Gly Gly Gly Ala Gly Ala Asn Gly Arg
145 150 155 160

Gly Arg Asp Arg Asp Met Glu Glu Pro Ser Ala Val
165 170